

**WHAT IS CLAIMED IS:**

1. A printer for printing a symbol encoding information, comprising:

a first storage area for storing display data from which a symbol to be printed is generated;

5 a symbol image generator for converting the display data stored in the first storage area to a specific symbol structure format, and generating from the specific symbol structure format bit pattern information representing the symbol to be printed;

a second storage area for storing the bit pattern information;

10 a calculator for calculating a horizontal symbol size and a vertical symbol size of the symbol to be printed from the bit pattern information;

a size information transmitter for sending the horizontal and vertical symbol sizes calculated by the calculator to a host device as symbol size information; and

15 a print controller for controlling printing of the bit pattern information of the symbol to be printed based on the symbol size information.

2. The printer of claim 1, wherein the symbol image generator comprises:

20 a code converter for converting the display data to a code pattern according to a protocol of the symbol to be printed, and generating the specific symbol structure format; and

a pattern generator for generating the bit pattern information of the symbol to be printed based on the specific symbol structure format.

25 3. The printer of claim 2, wherein the code converter, in converting the display data to a code pattern, compresses the coded display data, and includes error correction coding.

4. The printer of claim 1, wherein the symbol image generator generates an image of the symbol to be printed in response to a print request or a symbol size information send request from the host device.

5. The printer of claim 2, wherein the symbol image generator generates an image of the symbol to be printed in response to a print request or a symbol size information send request from the host device.

6. The printer of claim 3, wherein the symbol image generator generates an image of the symbol to be printed in response to a print request or a symbol size information send request from the host device.

10. The printer of claim 1, wherein the size information transmitter compares the size of the symbol to be printed with a specified printing area, and sends resulting comparison data to the host device.

15. The printer of claim 7, wherein the size information transmitter transmits the symbol size information or the comparison data, in response to print request or a symbol size information send request from the host device.

9. The printer of claim 8, wherein the print controller begins printing the symbol in response to a print request from the host device when the symbol size information or the comparison data indicates that the size of the symbol to be printed does not exceed the specified printing area.

20. The printer of claim 1, wherein the printer can print a stacked two-dimensional bar code including PDF417, SuperCode, and Ultracode symbologies, and a two-dimensional matrix code including VeriCode, Data Matrix, and MaxiCode symbologies.

25. A symbol printing method for printing a symbol from display data sent from a host device, said method comprising the steps of:

(a) receiving the display data;

(b) storing the received display data;

(c) generating a specific code and format representing a symbol to be printed based on the received display data;

(d) generating bit pattern information from the generated specific code;

5 (e) transmitting to the host device in response to a request from the host device horizontal and vertical size information for the symbol to be printed; and

(f) printing the bit pattern information of the symbol to be printed based on the horizontal and vertical size information.

12. The symbol printing method of claim 11, wherein step (c) comprises:

10 (c1) converting the received display data to a symbol code, compressing the coded display data, and including an error correction code.

13. The symbol printing method of claim 11, wherein step (e) comprises:

(e1) comparing the size of the symbol to be printed with a specified printing area, and sending resulting comparison data to the host device.

15 14. The symbol printing method of claim 13, wherein step (f) is performed in response to a print request from the host device when the comparison data indicates the size of the symbol to be printed does not exceed the specified printing area.

15. The symbol printing method of claim 11, wherein steps (c) to (e) are performed in response to a size information send request from the host device.

20 16. The symbol printing method of claim 12, wherein steps (c) to (e) are performed in response to a size information send request from the host device.

17. The symbol printing method of claim 13, wherein steps (c) to (e) are performed in response to a size information send request from the host device.

18. The symbol printing method of claim 11, wherein steps (c) to (f) are performed in response to a print request from the host device.

19. The symbol printing method of claim 12, wherein steps (c) to (f) are performed in response to a print request from the host device.

5 20. The symbol printing method of claim 13, wherein steps (c) to (f) are performed in response to a print request from the host device.

21. The symbol printing method of claim 11, wherein the symbol printing method is a method for printing a two-dimensional code including a stacked two-dimensional code, including PDF417, SuperCode, and Ultracode symbologies, and a two-dimensional matrix bar code including VeriCode, Data Matrix, and MaxiCode symbologies.

22. A machine-readable storage medium containing a program of instructions for printing as a symbol data sent from a host device, said program of instructions comprising:

15 (a) receiving the display data;

(b) storing the received display data;

(c) generating a specific code and format representing a symbol to be printed based on the received display data;

(d) generating bit pattern information from the generated specific code;

20 (e) transmitting to the host device in response to a request from the host device horizontal and vertical size information for the symbol to be printed; and

(f) printing the bit pattern information of the symbol to be printed based on the horizontal and vertical size information.

23. The machine-readable storage medium of claim 22, wherein step (c) comprises:

25 (c1) converting the received display data to a symbol code, compressing the coded display data, and including an error correction code.

24. The machine-readable storage medium of claim 22, wherein step (e) comprises:

(e1) comparing the size of the symbol to be printed with a specified printing area, and sending resulting comparison data to the host device.

5 25. The machine-readable storage medium of claim 24, wherein step (f) is performed in response to a print request from the host device when the comparison data indicates the size of the symbol to be printed does not exceed the specified printing area.

26. The machine-readable storage medium of claim 22, wherein steps (c) to (e) are performed in response to a size information send request from the host device.

10 27. The machine-readable storage medium of claim 23, wherein steps (c) to (e) are performed in response to a size information send request from the host device.

28. The machine-readable storage medium of claim 24, wherein steps (c) to (e) are performed in response to a size information send request from the host device.

15 29. The machine-readable storage medium of claim 22, wherein steps (c) to (f) are performed in response to a print request from the host device.

30. The machine-readable storage medium of claim 23, wherein steps (c) to (f) are performed in response to a print request from the host device.

31. The machine-readable storage medium of claim 24, wherein steps (c) to (f) are performed in response to a print request from the host device.

20 32. The machine-readable storage medium of claim 22, wherein the symbol printing method is a method for printing a two-dimensional code including a stacked two-dimensional code, including PDF417, SuperCode, and Ultracode symbologies, and a two-dimensional matrix bar code including VeriCode, Data Matrix, and MaxiCode symbologies.

33. A printer driver, operably positioned between an application program running on a host device and a printer in communication with the host device, for controlling the printer based on a request from the application program, said printer driver comprising:

5 means for receiving display data from the application program;

symbol image generating means for generating from the received display data a specific format representing a symbol to be printed, and converting the specific format to bit pattern information representing the symbol;

10 means for calculating a horizontal symbol size and vertical symbol size from the bit pattern information;

size information transmission means for sending the calculated horizontal and vertical symbol sizes to the application program as symbol size information; and

15 print data transmission means for sending to the printer the bit pattern information of the symbol to be printed based on the symbol size information.

34. The printer driver of claim 33, wherein the printer driver comprises an OPOS object having a first object that provides an interface to the application program, and a second object that provides the first object with an interface to the printer.

20 35. The printer driver of claim 34, wherein the first object comprises the receiving means and the size information transmission means, and the second object comprises the symbol image generating means, calculating means, and print data transmission means.

36. A machine-readable storage medium containing a program of instructions for implementing the printer driver of claim 33.

25 37. The machine-readable storage medium containing a program of instructions for implementing the printer driver of claim 34.

38. The machine-readable storage medium containing a program of instructions for implementing the printer driver of claim 35.

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